Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

Grant Selection Committee (GSC) Structure Review

Advisory Committee Membership
Short Biographies

Adel Sedra

Mark Bisby

Nick Cercone

M. Elizabeth Cannon

Patrick Desjardins

Michael Gibbons, MBE

Peter March

Nils Petersen

B. Mario Pinto

Susan Pfeiffer

Gary Slater

Nancy Van Wagoner

Warwick Vincent

Carolynn Watters

Adel Sedra (Chair) – Dr. Sedra received his B.Sc. from Cairo University, Egypt, and his M.A.Sc. and Ph.D. from the University of Toronto, all in Electrical Engineering.

Dr. Sedra joined the faculty of the University of Toronto in 1969, and was promoted to Associate Professor in 1972, and to Professor in 1978. Between 1986 and 1993, he served as Chair of the Department of Electrical Engineering (now Electrical and Computer Engineering). On July 1, 1993, he assumed the position of Vice-President, Provost, and Chief Academic Officer of the University of Toronto and served in this capacity for nine years. Dr. Sedra joined the University of Waterloo as Dean of Engineering on July 1, 2003.

Dr. Sedra specializes in the area of microelectronics. His research has centered on the theory and design of circuits for communication and instrumentation systems and has resulted in about 130 papers. In the late 1970s and early 1980s, he was one of the first researchers to work on switched capacitor filter techniques. More recently, Professor Sedra's work has been on tuneable and adaptive integrated filters. His contribution to engineering education included co-authoring the textbook *Microelectronic Circuits*, which is currently in its fifth edition and has been translated into nine languages.

Mark Bisby – Dr. Bisby received his D.Phil. and M.A. degrees from Oxford University. His first faculty appointment was in the Department of Medical Physiology, University of Calgary, in 1973, and he remained at the university until 1989, becoming a full professor in 1983. During this time, he served as Assistant Dean, Medical Education, and Assistant Dean, Medical Sciences, and was also Chair of the Neuroscience Research Group. In 1989, he became Head of the Department of Physiology at Queen's University (Kingston), and in November 1997, he left to become the Director of the Programs Branch of the Medical Research Council of Canada. In 1989-90, he was President of the Canadian Federation of Biological Societies, and in 1992-93, President of the Canadian Physiological Society.

Dr. Bisby's research interests evolved from studies of protein and lipid transport within nerve cells and their processes, to investigations on the mechanisms involved in nerve regeneration. Most recently, he explored the inappropriate regenerative events that follow nerve injury and lead to chronic pain.

As Vice President, Research Portfolio, CIHR, Dr. Bisby worked with the CIHR's institutes, the research community and other stakeholders to set the research agenda for CIHR, and to maintain and improve the environment for excellence in health research in Canada.

Nick Cercone – Dr. Cercone holds degrees in engineering science and computing science, and is currently Dean of Science and Engineering at York University. He served as a professor and Dean of Computer Science at Dalhousie University from 2002 to 2007. Prior to Dalhousie, he was Chair of Computer Science at the University of Waterloo; Associate Vice-President Research and Dean of Graduate Studies at the University of Regina; and Chair of Computing Science at Simon Fraser University. In these positions, he initiated new programs and enhanced the faculty complement.

Dr. Cercone's research interests include artificial intelligence, computational linguistics, knowledge discovery and data mining. At York University, he holds his academic appointment in the Department of Computer Science and Engineering.

Dr. Cercone has served on a variety of grant selection committees for NSERC and other agencies, including the Canada Foundation for Innovation and Canada Research Chairs. His NSERC committee service includes the Interdisciplinary GSC, the Steacie Fellowships Committee, the Strategic Projects Panel and the Collaborative Health Research Projects Panel.

M. Elizabeth Cannon – Dr. Cannon is Dean of the Schulich School of Engineering at the University of Calgary. Prior to her appointment as Dean, Dr. Cannon served as a professor and Head of the Department of Geomatics Engineering at the University of Calgary. She holds a B.Sc. in Mathematics from

Acadia University, as well as a B.Sc., M.Sc. and Ph.D. in Geomatics Engineering from the University of Calgary.

Leading research and teaching in the area of satellite navigation for land, air and marine applications have garnered Dr. Cannon an impressive reputation on the world stage in Geomatics. She has been involved with GPS since 1984, both industrially and academically, and has published over 95 journal and 175 conference papers. Her research has encompassed the development of new satellite navigation methods, algorithms and integrated systems that have been applied to such areas as vehicular navigation, precision farming and aircraft flight inspection. The results of her research have been commercialized through the licensing of software to over 200 agencies worldwide. This work earned her an EWR Steacie Fellowship in 2002.

Dr. Cannon was a member of the NSERC Civil Engineering GSC (06) from 1997 to 1999, the Reallocations Committee in 2001-02, and the Committee on Research Partnerships from 2003 to 2006.

Patrick Desjardins – Dr. Desjardins is a Canada Research Chair at École Polytechnique de Montréal, who focuses on the development of an atomic-level understanding of thin film growth and interfacial reactions in materials targeted for advanced applications in the fields of microelectronics and optoelectronics, two industries that encompass the fibre-optic telecommunications and data storage and processing industries. He is the Director of the Thin-Film Physics and Technology Research Centre, a research centre dedicated to the science and technology of thin films, surfaces and interfaces that includes 28 professors from the École Polytechnique de Montréal and the Université de Montréal. He is also the President of the Scientific Board of NanoQuébec, a provincial network of university laboratories carrying out research in nanoscience and nanotechnology.

Michael Gibbons, MBE – Dr. Gibbons is Strategic Consultant, Science and Technology Policy Research, Sussex University (U.K.). Dr. Gibbons took up this position upon retirement as Secretary General of the Association of Commonwealth Universities in August 2004. Prior to these appointments, he was Founding Director of the Programme of Policy Research in Engineering Science and Technology at the University of Manchester, and Director of Research and Technology Transfer in that university. Dr. Gibbons has an active interest in science and technology policy generally, and has carried out research in the process of technological innovation in industry and the evaluation of research. He is the co-author of two major books on the changing notions of knowledge production: *New Modes of Knowledge Production* and *Re-thinking Science*, which some regard as having set the agenda for much current science policy debate. Also, his work has been vigorously taken up by South African authorities, who have adapted the notion of Mode 2 research in the transformation of the South African higher education system. From 2000 to 2003, he was a member of the U.K. Economic and Social Research Council and Chair of its Research

Priorities Board. He has acted as a specialist advisor for the U.K. Parliamentary Science and Technology Committee, and has been a consultant with the OECD for many years.

Dr. Gibbons is currently Chair of the Board of Quest University, Canada's first private not-for-profit university.

Peter March – Dr. March is Director of the Mathematics Division at the U.S. National Science Foundation. Previously, he was Chair of the Department of Mathematics at Ohio State University. His research interests include Brownian motion on manifolds, measure-valued diffusion, applied probability and probability theory.

Nils Petersen – Dr. Petersen is Director General of the National Research Council of Canada's National Institute for Nanotechnology (NINT). He earned a Ph.D. in Chemistry from the California Institute of Technology and a B.Sc. in Chemistry from The University of Western Ontario (UWO).

In 1981, after holding positions at Cornell University and Washington University Medical School, Dr. Petersen joined UWO's Department of Chemistry as a faculty member. During his time in London, Ontario, Dr. Petersen was Associate Dean of the Faculty of Graduate Studies (1993-95), and chaired the Department of Chemistry (1995-99). Since 1999, he has held senior leadership positions at UWO, including Associate Vice-President, Research, and more recently, Vice-President (Research). In 2004, he became Director General of NINT and Professor of Chemistry at the University of Alberta.

Dr. Petersen's current research focuses on intermolecular interactions in biological membranes, particularly the study of the dynamics and distribution of molecules within the membrane as a means of understanding cell-cell communication, signal transduction, adhesion and the locomotion of cells.

He has served on and chaired both the Cell Biology GSC and the Collaborative Health Research Project Selection Committee. He serves on the NSERC Discovery Accelerator Supplement Selection Committee and has assisted NSERC on various ad hoc advisory committees.

B. Mario Pinto – Dr. Pinto received his B.Sc. in Chemistry and his Ph.D. from Queen's University (Kingston). He served as Chair of the Chemistry Department from 1999 to 2004, and is currently Vice-President, Research, at Simon Fraser University. Dr. Pinto received the 1992 Horace S. Isbell Award of the American Chemical Society, the 1993 Merck Frosst Award of the Canadian Society for Chemistry (CSC), and the 2002 Bernard Belleau Award of the CSC. He is a Fellow of the Chemical Institute of Canada, and was elected to the Academy of Sciences of the Royal Society of Canada in 2003.

Dr. Pinto is a pioneer in the field of chemical biology, having developed novel NMR/molecular modeling protocols for protein structure determination and the study of ligand topographies essential for drug and vaccine design. He was recently awarded a patent for his breakthrough on the effect of glycosidase inhibitors as novel therapeutic agents for Type 2 diabetes, which has proven effective in lowering blood glucose levels in rats. He is founder of the company Mimos Therapeutics, Inc.

Dr. Pinto has served on the Inorganic and Organic Chemistry (GSC 24), the NSERC Reallocation Steering Committee for Chemistry, the Selection Committee for Accelerator Grants for Exceptional New Opportunities for Chemistry, and currently serves on the NSERC Committee on Research Partnerships.

Susan Pfeiffer – Dr. Pfeiffer is a biological anthropologist who conducts research on skeletal biology, aging, the origin of modern humans, foraging adaptations and forensic anthropology. She is interested in reconstructing the conditions of past human lives from characteristics of bones and teeth, including their biomechanical, chemical and histological properties. Diet, disease and behaviour have been of particular interest to her in her studies of the past peoples of North America and South Africa. She conducts research on skeletal biology, bioarchaeology, estimation of age at death and the adaptations of past foraging populations.

Dr. Pfeiffer is currently Vice-Provost, Graduate Education, and Dean of Graduate Studies at the University of Toronto, and was the university's institutional representative during SSHRC's recent Transformation Exercise. In addition, she currently serves on the joint committee between the Canadian Association for Graduate Studies and the Tri-Councils on matters of graduate and postgraduate support.

Gary Slater – Dr. Slater is a specialist in the physics of polymers and macromolecules. He is also interested in electrophoresis (a technique for separating biomolecules based on their differential velocity in an electric field), DNA sequencing, microfluidics and nanofluidics. In addition, he is interested in computer simulations and applications of the theory of diffusion in biophysics.

In 1984, after receiving a Ph.D. from the Université de Sherbrooke, Dr. Slater worked for six years at the Xerox Research Centre in Mississauga. In 1990, he joined the Department of Physics at the University of Ottawa, where, in 1996, he was named Professor. From July 1997 to December 2000, he was Vice-Dean (Research) for the Faculty of Science. He was the Vice-Dean of the Faculty of Graduate and Postdoctoral Studies from January 2001 to June 2004, and has been its Dean since January 2005. He won the University of Ottawa Researcher of the Year award in 2001. An excellent popular science writer, Dr. Slater had a

weekly scientific column for many years in Sherbrooke's *La Tribune* and Toronto's *L'Express*.

Dr. Slater was on the last NSERC Reallocation Steering Committee for the Condensed Matter Physics GSC, and was a member of the Condensed Matter Physics GSC in the mid-1990s.

Nancy Van Wagoner – Dr. Van Wagoner is the Associate Vice President, Research and Graduate Studies, for Thompson Rivers University (TRU). Previously, she was Professor of Geology and Director of Continuing and Distance Education at Acadia University in Nova Scotia. Dr. Van Wagoner holds a B.Sc. in Geology from California State University, and a Ph.D. in Geology from Dalhousie University, and has a specific research interest in global change and geochemical cycles. She has over 17 years' experience in academic administration, serving in leadership positions in a number of professional organizations.

Warwick Vincent – Dr. Vincent obtained his B.Sc. (Hons.) from the University of Auckland, New Zealand, in Botany and Cell Biology, and his Ph.D. in Ecology from the University of California at Davis, USA, with postdoctoral studies at the Freshwater Biological Association in the U.K. He was appointed to a faculty position at Université Laval in 1990, and to a Tier 1 Canada Research Chair in 2002.

Dr. Vincent has conducted ecological research on lakes, rivers and coastal oceans in several parts of the world, including the subtropical convergence (South Pacific), Lake Titicaca (Peru-Bolivia), Lake Biwa (Japan) and the St. Lawrence River. His research group has a special interest in the relationships between microscopic life at the base of aquatic food webs and the physical aspects of aquatic ecosystems such as solar energy supply, temperature, mixing regimes and climate.

Since his first expedition to Antarctica in 1979, most of Dr. Vincent's research, books and articles have focused on the polar regions. His current research centres on aquatic ecosystems and microbial biodiversity in Canada’s high Arctic.

Dr Vincent has chaired the Evolution and Ecology GSC and the Northern Supplements committee, and he is currently Group Chair for the Environmental Sciences and Interdisciplinary GSCs.

Carolyn Watters – Dr. Watters is Dean of the Faculty of Graduate Studies (home of the Interdisciplinary Ph.D. program) at Dalhousie University, as well as a professor in the Faculty of Computer Science and Co-Director of the Web Information Filtering Lab. As a faculty member, Dr. Watters does research in information retrieval on the Web and human-computer interaction issues related

to accessing the Web on handheld devices. In 2001, she was the Director of Electronic Commerce programs, a partnership with the faculties of Computer Science, Law and Management. She does her best to encourage women in computer science, and she is interested in the historical perspectives of computing.

Dr. Watters has recently finished a three-year term on the Computing and Information Sciences A GSC.